

## Durham Research Online

---

### Deposited in DRO:

16 July 2018

### Version of attached file:

Accepted Version

### Peer-review status of attached file:

Peer-reviewed

### Citation for published item:

Hung Chen, Lung and Wu, Chia-Huei (2016) 'When does dispositional gratitude help athletes move away from experiential avoidance? The moderating role of perceived autonomy support from coaches.', *Journal of applied sport psychology*, 28 (3). pp. 338-349.

### Further information on publisher's website:

<https://doi.org/10.1080/10413200.2016.1162221>

### Publisher's copyright statement:

This is an Accepted Manuscript of an article published by Taylor Francis in *Journal of Applied Sport Psychology* on 19 Apr 2016, available online: <http://www.tandfonline.com/10.1080/10413200.2016.1162221>.

### Additional information:

## Use policy

---

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in DRO
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full DRO policy](#) for further details.

**When does dispositional gratitude help athletes to move away from experiential avoidance?**

**The moderating role of perceived coach autonomy support**

Lung Hung Chen

National Taiwan Sport University

Department of Recreation and Leisure Industry Management

Chia-huei Wu

Department of Management

London School of Economics and Political Science

**Acknowledgement**

The first author's research on gratitude was supported by Ministry of Science and Technology (103-22628-H-179-001-MY2), Taiwan, R.O.C.

Corresponding author: Lung Hung Chen

Department of Recreation and Leisure Industry Management, National Taiwan Sport University,

No. 250, Wen Hua 1st Road, Guishan, Taoyuan City, Taiwan

Tel: 886-937148789

Email: fjudragon@ntsu.edu.tw

**Abstract**

Experiential avoidance, the attempt to avoid negative experiences, can prevent athletes from reaching their goals. To mitigate this tendency, the authors offer a relational approach and propose that dispositional gratitude and perceived coach autonomy support will have an interaction effect in mitigating experiential avoidance. Time-lagged data from 140 athletes were analyzed. Dispositional gratitude and perceived coach autonomy support had a significant interaction effect on predicting experiential avoidance when Time 1 experiential avoidance was controlled. Those high in dispositional gratitude and perceived coach autonomy support decreased their experiential avoidance over time. Implications and application for experiential avoidance and gratitude were discussed.

Keywords: gratitude, experiential avoidance, autonomy, support, coaches

# **When does dispositional gratitude help athletes to move away from experiential avoidance?**

## **The moderating role of perceived coach autonomy support**

In order to achieve better performance, athletes need to train themselves intensively to enhance their physical and psychological strength. As the process is effortful, challenging, and uncomfortable due to inevitable physical pain and psychological stress (Gagné & Blanchard, 2007), athletes should overcome experiential avoidance which refers to a attempt to escape, avoid, or modify the forms or frequency of uncomfortable experiences, such as negative thoughts (e.g., “I might be a failure at this game”), unpleasant emotions (e.g., feeling anxious when facing a highly skillful competitor), and bodily sensations (e.g., tremors), in order to achieve their goals (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Mitigating experiential avoidance is important for athletes because experiential avoidance can lead individuals to take actions that deviate from their goals (Hayes et al., 1996) , such as having fewer practices or devoting less effort, and thus have negative consequences for their performance and well-being (Bond et al., 2011).

To mitigate experiential avoidance for athletes, Birrer, Röthlin, and Morgan (2012) and Gardner and Moore (2012) have indicated that a mindfulness-based intervention can help to reduce experiential avoidance in athletes. This is because mindfulness emphasizes non-judgmental awareness that encourages the acceptance of one’s internal state. Nevertheless, in addition to the cognitive approach via a mindfulness-based intervention, it is also possible to mitigate experiential avoidance via a relational approach. As being supported by others has been theorized and found to help individuals to confront negative feelings and to be resilient (Bowlby, 1988), we suggest that athletes will reduce experiential avoidance when they appreciate and perceive support from others. This relational approach is different from the mindfulness-based

1 approach or Acceptance and Commitment Therapy (Hayes, Pistorello, & Levin, 2012), which  
2 relies on an individual's non-judgmental awareness, as it emphasizes that an individual has to  
3 cope with and thus embrace negative experiences. Empirically, in a longitudinal study conducted  
4 over six years and focusing on the parenting environments of kids with a mean age of 12,  
5 Williams, Ciarrochi, and Heaven (2012) indicated that parenting behavior characterized by lower  
6 levels of warmth and high control results in higher experiential avoidance in kids as well as  
7 parenting behavior characterized by acceptance, responsiveness, and the flexible discussion of  
8 rules leads to lower experiential avoidance over time. This finding indicates the possibility of  
9 mitigating experiential avoidance via a relational approach. As such, the aim of this study is to  
10 examine a relational approach for athletes to mitigate their experiential avoidance.

11 In this study, we specifically examine an interaction effect between athletes' dispositional  
12 gratitude and perceived coach autonomy support in predicting changes in experiential avoidance.  
13 As we will elaborate shortly, we propose that in order to feel supported and to embrace the  
14 support, athletes should first have a tendency to see and appreciate the care and help provided by  
15 others, represented by one's dispositional gratitude or a "general tendency to recognize and  
16 respond with grateful emotion to the roles of other people's benevolence in the positive  
17 experiences and outcomes that one obtains" (McCullough, Emmons, & Tsang, 2002, p. 112).  
18 Then, when grateful athletes do perceive support from others, they are more likely to embrace  
19 the support and utilize the resource to face negative experiences. In other words, we suggest that  
20 only athletes who have higher dispositional gratitude and also perceive support from others are  
21 more likely to have a strong sense of support to help them to overcome experiential avoidance.  
22 As coaches play an important role in athletes' training and career development, we focus on  
23 coaches' support in this study. To test our hypothesis, we assessed athletes' experiential

avoidance at two times within a five-month interval, and we examined the interaction effect of dispositional gratitude and perceived coach autonomy support in predicting changes in experiential avoidance. Below, we provide arguments to support our hypotheses.

#### **Hypothesis development**

The importance of gratitude in athletes' lives has been recognized. For example, Carl Lewis, a track and field athlete, mentioned that showing gratitude toward his competitors is a part of his competition repertoire (Lewis & Marx, 1990). Research on gratitude in athletes has indicated that those who are high in dispositional gratitude and trust their coaches tend to have higher self-esteem (Chen & Wu, 2014), perceive higher social support from coaches and teammates, and have better subjective well-being (Chen, 2013). In addition, grateful athletes are more satisfied with life because they perceive their teammates' coherence (Chen, Kee, & Chen, 2015).

Here, we argue that dispositional gratitude helps athletes to decrease their experiential avoidance, especially when they perceive higher support from others. First, as those higher in dispositional gratitude are more attentive to the benefits provided by others (Chen, 2013; Wood, Maltby, Gillett, Linley, & Joseph, 2008), they are more likely to use resources or support from others to overcome negative experiences when approaching their goals. For example, in a nationwide longitudinal study, grateful individuals were found to cope better with financial strain than others were (Krause, 2009), which could be due to their ability to use available resources. Second, individuals higher in dispositional gratitude tend to see everything as a gift in their grateful worldviews (McCullough et al., 2002) and thus tend to see negative thoughts and unpressured emotions as an indication of the need for improvement and development. In line with this, Lambert, Graham, Fincham, and Stillman (2009) found that dispositional gratitude is

1 significantly related to positive reframing, a concept that refers to perceiving in a positive light  
2 something that was previously viewed as negative.

3 With these two main characteristics, when perceiving autonomy support from coaches,  
4 grateful athletes are more likely to rely on coaches' support to overcome negative experiences  
5 and to see those uncomfortable experiences as opportunities for development. We specifically  
6 focus on coaches' autonomy support, or "the attitude and practices of a person or a broader  
7 social context that facilitate the target individual's self-organization and self-regulation of  
8 actions and experience" (Ryan & Deci, 2008, p. 188), because autonomy support provides  
9 unconditional positive regard (Deci & Ryan, 1987; Ryan, Huta, & Deci, 2008) that allow athletes  
10 to rely on such support to overcome obstacles as they strive for goal achievement. In other words,  
11 by showing autonomy support, coaches can be regarded as secure attachment figures (Bowlby,  
12 1988) who encourage athletes to explore and embrace experiences that can facilitate  
13 development.

14 Coaches' autonomy support is important for grateful athletes to reduce experiential  
15 avoidance because grateful athletes are more likely to embrace negative experiences when they  
16 can rely on coaches' support without having the pressure to fulfill specific requirements and  
17 without having worries about facing evaluative judgment from their coaches. Moreover, in such  
18 a supportive condition, grateful athletes tend to see themselves as beneficiaries of their coaches  
19 and thus feel affirmed, esteemed, and valued (McCullough et al., 2002), which helps them to  
20 build their psychological strength and thus tolerate negative experiences in their pursuit of  
21 excellence. We do not expect grateful athletes to reduce their experiential avoidance if autonomy  
22 support from coaches is low because without perceiving support from coaches, it is unlikely for  
23 grateful athletes to build a sense of support and to embrace negative experiences accordingly.

Based on the above reasoning, we focus on the change in experiential avoidance by using the residuals-as-change-scores approach in regression analysis (Cronbach & Furby, 1970), and we propose that dispositional gratitude and perceived coach autonomy support will have an interaction effect in predicting experiential avoidance after controlling for the prior level of experiential avoidance. Specifically, we suggest that dispositional gratitude will only have a negative relationship with experiential avoidance after controlling for the prior level of experiential avoidance (i.e., change of experiential avoidance over time) when perceived coach autonomy support is high.

## Method

### Participants and Procedure

Two hundred and eight collegiate athletes participated in this study originally. Our research assistant approached their head coaches to ask for their permission to contact the athletes directly. Athletes read and signed the informed consent form, which indicated participants' ethical rights. Measurements were administered to the athletes before their practices; this was done in classrooms without the coach present. Their confidentiality and anonymity were ensured. They volunteered to participate in this study and were given NT\$50 for returning each time.

A total of 140 athletes (77 male) provided complete data for this study. The mean age was 21.15 years ( $SD = 1.66$ ; two athletes did not report their age), and the average sport experience was 9.73 years ( $SD = 2.46$ ). They were 33 handball players, 28 track and field athletes, 19 Taekwondo players, 18 volleyball players, 11 basketball players, nine soccer players, eight tennis players, eight softball players, and six table tennis players. Athletes completed the gratitude questionnaire (independent variable) and experiential avoidance (dependent variable) at Time 1.



1 Approximately five months later (Time 2), they were asked to complete measurements assessing  
2 perceived coach autonomy support (moderator) and experiential avoidance again.

### 3 **Measurements**

4 **Dispositional gratitude.** In the current study, the Gratitude Questionnaire-Taiwan (GQ-T)  
5 version was used to assess dispositional gratitude. This version was translated from the Gratitude  
6 Questionnaire (GQ; McCullough et al., 2002) and validated by Chen, Chen, Kee, and Tsai  
7 (2009). Sample items are "I have so much in life to be thankful for" and "If I had to list  
8 everything that I felt grateful for, it would be a very long list." Participants indicated their  
9 responses on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).  
10 The original version of GQ has six items. Its validity was established by McCullough et al. (2002)  
11 with four studies. In the first study, they developed and selected six items for assessing gratitude  
12 in an exploratory factor analysis and validated the single factor structure in a confirmatory factor  
13 analysis. In terms of convergent and discriminant validity, GQ was positively associated with  
14 gratitude reported by informants and was also associated with but not equivalent to spirituality,  
15 positive affect, well-being, prosocial traits and behaviors and big-five personalities. The same  
16 results were replicated in a large nonstudent sample in their Study 2. Furthermore, GQ is  
17 negatively associated with envy and materialistic attitudes in Study 3. These associations were  
18 also obtained after controlling for neuroticism/negative affectivity, extraversion/positive  
19 affectivity, and agreeableness (Study 4). In terms of validity of the GQ-T, results of confirmatory  
20 factor analysis with two independent samples supported one factor structure but indicated that  
21 only five items have significant factor loadings. As such, only five items were used in the GQ-T.  
22 The GQ-T was positively correlated with but not equivalent to concepts such as happiness ( $r =$   
23 31,  $p < .001$ ), optimism ( $r = .28$ ,  $p < .001$ ), agreeableness ( $r = .42$ ,  $p < .001$ ), and extraversion ( $r =$

11,  $p < .01$ ), which is similar to McCullough et al.'s (2002) finding. To date, the GQ-T has been widely used in the general population (Lin, 2013; Loo, Tsai, Raylu, & Oei, 2014) and in athlete samples (Chen, 2013; Chen & Wu, 2014) in Taiwan.

**Experiential avoidance.** The seven-item Acceptance and Action Questionnaire-II (AAQ-II) developed by Bond et al. (2011) was used to measure athletes' experiential avoidance. Chang, Chi, Lin, and Ye (in press) validated the Chinese version of AAQ-II. First, confirmatory factor analysis was performed with 154 undergraduate students, and the original Item 6 was eliminated because of poor factor loading. The remaining six items demonstrated a satisfactory fit,  $\chi^2(9) = 17.98$ , CFI = .98, NNFI = .96, RMSEA = .077, SRMR = .046. In addition, the test-retest reliability within a 10-month interval was high ( $r = .65$ ,  $p < .01$ ). Second, factor invariance was conducted and supported across an athlete sample ( $N = 170$ ) and an undergraduate student sample ( $N = 154$ ). Third, the nomological validity was examined with an athlete sample ( $N = 76$ ). We found that AAQ-II scores significantly negatively correlated with positive emotion ( $r = -.37$ ,  $p < .001$ ). Moreover, the AAQ-II scores significantly related to negative emotion ( $r = .67$ ,  $p < .001$ ) and depression ( $r = .70$ ,  $p < .001$ ). The internal consistency was .81, .82, and .78 for the pilot studies, respectively. Overall, the reliability, factorial validity, factor invariance, and nomological validity of the AAQ-II across the athlete and student samples were supported. Sample items are "I'm afraid of my feelings" and "motions cause problems in my life." Participants indicated their responses on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

**Perceived coach autonomy support.** The Sport Climate Questionnaire (SCQ) developed by Deci (2001) has been used to measure perceived autonomy support from coaches (Adie, Duda, & Ntoumanis, 2012; Jõesaar, Hein, & Hagger, 2012). The short version contains six items (e.g., "I

1 feel that my coach provides me choices and options” and "I feel understood by my coach") and  
2 was used to increase the response rate. In a previous study, Jõesaar et al. (2012) reported that the  
3 short version of SCQ satisfactorily predicted validity (Time 1 perceived coach autonomy support  
4 significantly predicted Time 2 task-involving after controlling for the Time 1 task-involving) and  
5 reliability (the Cronbach’s  $\alpha$  was .80 at Time 1 and .81 at Time 2). Participants indicated their  
6 responses on a seven-point Likert scale ranging from 1 (*strong disagree*) to 7 (*strong agree*) in  
7 our study.

## 8 Results

9 The means, standard deviations, and correlations for the variables are presented in Table 1.  
10 Perceived coach autonomy support was positively related to gratitude ( $r = .20, p < .05$ ). In  
11 addition, experiential avoidance at Time 1 was also positively correlated with experiential  
12 avoidance at Time 2 ( $r = .61, p < .01$ ). In terms of change in experiential avoidance in the  
13 sample as a whole, the results of a paired-samples  $t$ -test indicated that experiential avoidance at  
14 Time 1 ( $M = 3.75, SD = 1.21$ ) is not significantly different from experiential avoidance at Time 2  
15 ( $M = 3.83, SD = 1.05$ ) ( $t = -.10, ns$ ). As such, athletes in our sample as a whole did not change  
16 their mean level of experiential avoidance over time. As our research focused on change in an  
17 athlete's experiential avoidance relative to other athletes, rather than on the mean-level change of  
18 the sample, the null finding on the mean-level change did not prevent us from performing  
19 analysis to test our hypothesis. For details about the different types of change, please refer to  
20 Caspi, Roberts, and Shiner (2005).

21 Because our research variables are all continuous variables, we created product terms of  
22 gratitude and perceived coach autonomy support and used these product terms to examine the  
23 interaction effect between gratitude and perceived coach autonomy support. This is an

appropriate approach and a better approach than a dichotomous approach is (i.e., split sample into groups based on their scores on research variables) to test an interaction effect of continuous variables (DeCoster, Iselin, & Gallucci, 2009; MacCallum, Zhang, Preacher, & Rucker, 2002). Dispositional gratitude and perceived coach autonomy support were standardized  $((X-M)/SD)$  prior to the construction for the interaction terms (dispositional gratitude x perceived coach autonomy support). This standardization procedure prevents a multicollinearity problem resulting from a high correlation between the first-order terms and the interaction terms (Jaccard & Turrisi, 2003). Following the suggestion of Cohen, Cohen, West, and Aiken (2003), we conducted a series of regression analyses to examine the proposed interaction effect. Table 2 presents the results of these analyses.

In Model 1, experiential avoidance at Time 1 was first included to predict experiential avoidance at Time 2, and its effect was significant ( $b = .65, p < .001$ ). When experiential avoidance at Time 1 was used to predict experiential avoidance at Time 2, the left variances that cannot be explained by experiential avoidance at Time 1 can be regarded as changes from Time 1 to Time 2. In Model 2, we additionally included the main effects of dispositional gratitude and perceived coach autonomy support and found that neither gratitude ( $b = -.07, ns$ ) nor perceived coach autonomy support ( $b = .03, ns$ ) significantly predicted experiential avoidance at Time 2 after controlling for the experiential avoidance at Time 1. In Model 3, we further included the interaction term between dispositional gratitude and perceived coach autonomy support. We found this interaction term to be significant ( $b = -.18, p < .05$ ) and explained an additional 2% of the variance of experiential avoidance at Time 2 after controlling for experiential avoidance at Time 1.

Based on the suggestion of Aiken and West (1996), we presented an interaction plot in

Figure 1 by using one standard deviation above and below the means of perceived coach autonomy support and gratitude values to indicate higher and lower perceived coach autonomy support and gratitude levels. The results of simple slope analyses (Dawson & Richter, 2006) revealed that dispositional gratitude had a negative predictive effect on experiential avoidance at Time 2 when perceived coaches' autonomy support was high (one standard deviation above the mean;  $b = -.29, p < .05, t = -2.36$ ), but it did not have a significant predictive effect when perceived coaches' autonomy support was low (one standard deviation below the mean;  $b = .10, ns, t = .91$ ). This finding reveals that those high in dispositional gratitude decreased their experiential avoidance over time only when they perceived higher autonomy support from coaches.

-----  
Insert Table 1, Table 2, and Figure 1 here  
-----

## Discussion

In this study, we offered a relational perspective on mitigating athletes' experiential avoidance over time and found that when perceiving higher autonomy support from coaches, grateful athletes decreased their tendencies of experiential avoidance over time. Our study brings several contributions. First, different from the mindfulness-based approach, we offer a relational perspective to understand how to mitigate athletes' experiential avoidance. Second, our study extends the scope of the psychological consequences of gratitude in athlete research. In contrast to previous research focusing on athletes' well-being, such as life satisfaction and burnout (Chen & Kee, 2008), our examination suggests that gratitude brings a relational function in shaping one's willingness to appreciate and embrace negative experiences.

1        In other words, gratitude not only brings pleasant feelings (McCullough et al., 2002), such  
2        as higher life satisfaction, but also may help athletes to see undesirable experiences in a positive  
3        way (Jia, Tong, & Lee, 2014; Lambert, Fincham, & Stillman, 2011). Finally, consistent with  
4        Chen and Wu (2014), we show again that coaches play an important role in facilitating the  
5        beneficial effect of gratitude for athletes, suggesting that supportive coaches are crucial for  
6        grateful athletes to enjoy athlete lives. Below, we elaborate these contributions and their  
7        implications.

### 8        **A Relational Approach to Mitigate Experiential Avoidance**

9        Our study extends previous research by investigating factors that help to mitigate  
10       experiential avoidance over time. Experiential avoidance has been found to be detrimental to  
11       one's well-being (e.g., Panayiotou et al., 2015; Wilson, Wilhelm, & Hartmann, 2014), and in  
12       order to mitigate its negative impact, intervention studies have been conducted to understand  
13       how one can effectively deal with the negative consequences of experiential avoidance (Hann &  
14       McCracken, 2014; Swain, Hancock, Dixon, & Bowman, in press). In contrast to this reactive  
15       approach, which aims to mitigate the link between experiential avoidance and its negative  
16       outcomes, we adopt a proactive approach to examine whether we can help individuals to directly  
17       reduce their tendencies of experiential avoidance. In addition to the mindfulness-based  
18       intervention—a cognitive approach that has been found to be a useful approach for mitigating  
19       experiential avoidance over time for athletes such as Birrer et al. (2012) and Gardner and Moore  
20       (2012)—we indicate a relational approach to achieve the same goal. This relational approach  
21       encourages athletes to appreciate and rely on coaches' support to cope with and thus embrace  
22       negative experiences, which is different from the mindfulness-based approach that encourages  
23       athletes to accept their internal states. As such, our proposed relational approach can also be

1 regarded as a resource-based approach such that if athletes have resources to cope with  
2 inevitable, negative experiences for improvement, they are more likely to reduce attempts to  
3 escape, avoid, or modify the forms or frequency of uncomfortable experiences.

#### 4 **Psychological Consequence of Gratitude**

5 By examining the effect of dispositional gratitude, our study also extends research on  
6 gratitude in athlete studies by advancing our understanding of the psychological consequences of  
7 gratitude. Dispositional gratitude has been linked to athletes' well-being, such as higher team  
8 satisfaction, life satisfaction, and lower burnout (Chen, 2013; Chen & Kee, 2008). In contrast to  
9 a direct focus on those well-being outcomes, the focus of this study on change in experiential  
10 avoidance suggests a psychological mechanism for explaining how dispositional gratitude can  
11 influence athletes' well-being, especially when support from others is available and perceived.  
12 As experiential avoidance has been theorized and found to influence one's well-being (e.g.,  
13 Panayiotou et al., 2015; Wilson et al., 2014), it is likely that dispositional gratitude can have an  
14 influence on one's well-being via its function of shaping the tendency of experiential avoidance.  
15 In other words, our examination of experiential avoidance provides a different account for  
16 understanding the link between dispositional gratitude and athletes' well-being. Future studies  
17 are needed to empirically corroborate this idea.

#### 18 **The Moderating Role of Perceived Coach Autonomy Support**

19 Finally, we found that dispositional gratitude did not have a main effect of mitigating  
20 experiential avoidance, suggesting that gratitude did not exert its effect on experiential avoidance  
21 independently. Yet, its significant interaction effect with perceived coach autonomy support  
22 highlights that perceived coach autonomy support is essential for evoking the positive function  
23 of gratitude in mitigating experiential avoidance. This finding is similar to the results reported by

Chen and Wu (2014). In a longitudinal study focusing on the growth of athletes' self-esteem over time, they found that dispositional gratitude did not have a main effect of enhancing athletes' self-esteem but had significance when athletes had trustworthy relationships with their coaches. Both their studies and our research indicate the important role of coaches in facilitating the positive functions of gratitude for athletes.

## **Practical Implications**

Our finding has practical implications for how to help athletes to overcome a tendency of experiential avoidance. Current results of interaction specifically indicates that only for those high in dispositional gratitude, having perceived coach autonomy support can help them to decrease experiential avoidance, which suggests that coaches should be aware that not all athletes will benefit from having autonomy support, and thus, they should know their athletes well in order to provide appropriate support. Moreover, coaches should be aware that autonomy support can help to decrease experiential avoidance. In other words, coaches need to offer their support to facilitate athletes' autonomy, rather than providing support in a manner that may threaten athletes' sense of determination. As reported by Haerens, Aelterman, Vansteenkiste, Soenens, and Van Petegem (2015), providing support in a controlling manner can actually have a negative influence on individuals, such as by causing poor quality of motivation.

For those low in dispositional gratitude, our research did not inform how to help them to overcome experiential avoidance. One approach that could be adopted, however, is to make those people more grateful so as to evoke a positive function of gratitude, with autonomy support, to mitigate experiential avoidance. The effectiveness of gratitude intervention has been demonstrated in previous studies. For example, Emmons and McCullough (2003) simply asked participants to count their blessings in daily life to enhance the well-being of individuals



suffering from chronic diseases. Nevertheless, whether this intervention approach is effective for athletes low in dispositional gratitude, especially for mitigating experiential avoidance, should be empirically examined. Another possibility is to explore whether those low in dispositional gratitude need different forms of support to overcome experiential avoidance. For example, providing support that can fulfill their need for relatedness may help them to embrace negative experiences and overcome experiential avoidance, as they may need such support to feel that they will be well taken care of when encountering negative experiences. More studies are thus needed to understand how to help those low in dispositional gratitude to overcome experiential avoidance.

## **Limitations and Conclusion**

Despite making valuable contributions, our study also has several limitations. First, we only focus on coaches' support in this study. As previous studies have consistently reported the role of significant others in supporting athletes' positive development (e.g., Jõesaar et al., 2012; Jowett & Timson-Katchis, 2005), future studies are encouraged to examine whether and how family members can help athletes to mitigate experiential avoidance. Second, the types of support can be extended. We only focused on autonomy support in this study and did not include support for competence or relatedness needs, which have been emphasized in self-determination theory as basic human needs. Future studies can expand on the sources and dimensions of support to fully understand the role of support in shaping experiential avoidance. Third, the measures are all self-reported, which can bring common method bias (Lindell & Whitney, 2001) and result in an overestimation of the coefficients. Informant ratings can be used to overcome common method bias in the future. Nevertheless, common method bias should not threaten our findings because if common method bias is stronger, it is unlikely to obtain an interaction effect between variables

(Siemsen, Roth, & Oliveira, 2009). Fourth, we did not consider variables such as injury history, time in season, success, and failure experience in this study, as they may influence one's experiential avoidance and the function of coach support in facing negative events. These variables should be taken into account in future research. In addition, we only measured perceived coach autonomy support at Time 2 with the aim of mitigating common method variance such that participants could report having more coach support right after completing the gratitude questionnaire. However, athletes actually can change their perceptions of coaches' autonomy support over time, and our research model did not fully consider such dynamics in a longitudinal process, which should be taken into account in the future. Moreover, we did not explore the issue of time in this study. Five months was used as the only time period to examine change in experiential avoidance, but there was no specific guidance for when this change would be more likely to occur. Therefore, more studies are required to examine the effect of time.

Finally, in this study, we focused only on how to decrease experiential avoidance. Although we did not have direct evidence to support the idea that experiential avoidance would result in meaningful and measurable behavior changes in sports, research indicated that experiential avoidance was related to determinants that have been found to influence athletic performance, such as emotion regulation (Fernández, et al., 2013), depressive symptoms (Panayiotou, et al., 2005), and coping strategies (Kashdan, et al., 2006). In other words, experiential avoidance may exert its effect on athletic performance via multiple pathways. More studies are required to empirically examine whether and how experiential avoidance can influence athletic performance and whether decreasing experiential avoidance can help to improve athletic performance.

In conclusion, discomfort is inevitable for athletes on their paths to excellence. Those who cannot tolerate such inevitable negative experiences are more vulnerable in goal pursuit. To

1 understand how to mitigate experiential avoidance in athletes or to make them embrace  
2 inevitable negative experiences, we examined the role of dispositional gratitude and perceived  
3 coach autonomy support in mitigating experiential avoidance over time, and we found that  
4 having higher gratitude and perceived coach autonomy support are critical factors in decreasing  
5 athletes' experiential avoidance.  
6

## References

- Adie, J. W., Duda, J. L., & Ntoumanis, N. (2012). Perceived coach-autonomy support, basic need satisfaction and the well- and ill-being of elite youth soccer players: A longitudinal investigation. *Psychology of Sport and Exercise, 13*, 51-59. doi: org/10.1016/j.psychsport.2011.07.008
- Aiken, L. S., & West, S. G. (1996). *Multiple regression: Testing and interpreting interaction*. Newbury Park, CA: Sage.
- Birrer, D., Röthlin, P., & Morgan, G. (2012). Mindfulness to enhance athletic performance: Theoretical considerations and possible impact mechanisms. *Mindfulness, 3*, 235-246. doi:10.1007/s12671-012-0109-2
- Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., . . . Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42*, 676-688. doi:10.1016/j.beth.2011.03.007
- Bowlby, J. (1988). *A secure base : Parent-child attachment and healthy human development*. New York: Basic Books.
- Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology, 56*, 453-484.
- Chang, W., Chi, L., Lin, S.-H., & Ye, Y.-C. (in press). Psychometric properties of the Acceptance and Action Questionnaire - II for Taiwanese college students and elite athletes. *Current Psychology*. doi:10.1007/s12144-015-9395-x

- 1 Chen, L. H. (2013). Gratitude and adolescent athletes' well-being: The multiple mediating roles  
2 of perceived social support from coaches and teammates. *Social Indicators Research*,  
3 *114*, 273-285. doi:10.1007/s11205-012-0145-2
- 4 Chen, L. H., Chen, M.-Y., Kee, Y. H., & Tsai, Y.-M. (2009). Validation of the Gratitude  
5 Questionnaire (GQ) in Taiwanese undergraduate students. *Journal of Happiness Studies*,  
6 *10*, 655-664. doi:10.1007/s10902-008-9112-7
- 7 Chen, L. H., & Kee, Y. H. (2008). Gratitude and adolescent athletes' well-being. *Social*  
8 *Indicators Research*, *89*, 361-373. doi:10.1007/s11205-008-9237-4
- 9 Chen, L. H., Kee, Y. H., & Chen, M.-Y. (2015). Why grateful adolescent athletes are more  
10 satisfied with their life: The mediating role of perceived team cohesion. *Social Indicators*  
11 *Research*, *124*, 463-476. doi:10.1007/s11205-014-0798-0
- 12 Chen, L. H., & Wu, C.-H. (2014). Gratitude enhances change in athletes' self-esteem: The  
13 moderating role of trust in coach. *Journal of Applied Sport Psychology*, *26*, 349-362.  
14 doi:10.1080/10413200.2014.889255
- 15 Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation*  
16 *analysis for the behavioral sciences* (3 ed.): Hillsdale: Erlbaum.
- 17 Cronbach, L. J., & Furby, L. (1970). How we should measure "change": Or should we?  
18 *Psychological Bulletin*, *74*, 68-80.
- 19 Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple  
20 regression: Development and application of a slope difference test. *Journal of Applied*  
21 *Psychology*, *91*, 917-926.
- 22 Deci, E. L. (2001). The sport climate questionnaire. Retrieved March 11, 2006 from.  
23 [http://www.psych.rochester.edu/SDT/measures/auton\\_sport.html](http://www.psych.rochester.edu/SDT/measures/auton_sport.html).

- 1 Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior.  
2 *Journal of Personality and Social Psychology*, 53, 1024-1037.
- 3 DeCoster, J., Iselin, A.-M. R., & Gallucci, M. (2009). A conceptual and empirical examination  
4 of justifications for dichotomization. *Psychological Methods*, 14, 349-366.
- 5 Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An  
6 experimental investigation of gratitude and subjective well-being in daily life. *Journal of*  
7 *Personality and Social Psychology*, 84, 377-389. doi:10.1037/0022-3514.84.2.377
- 8 Gagné, M., & Blanchard, C. (2007). Self-determination theory and well-being in athletes. In M.  
9 S. Hagger & N. L. D. Chatzisarantis (Eds.), *Intrinsic motivation and self-determination in*  
10 *exercise and sport* (pp. 243-254). Champaign, IL: Human Kinetics.
- 11 Gardner, F. L., & Moore, Z. E. (2012). Mindfulness and acceptance models in sport psychology:  
12 A decade of basic and applied scientific advancements. *Canadian Psychology*, 53, 309-  
13 318. doi:10.1037/a0030220
- 14 Haerens, L., Aelterman, N., Vansteenkiste, M., Soenens, B., & Van Petegem, S. (2015). Do  
15 perceived autonomy-supportive and controlling teaching relate to physical education  
16 students' motivational experiences through unique pathways? Distinguishing between the  
17 bright and dark side of motivation. *Psychology of Sport and Exercise*, 16, 26-36.  
18 doi:org/10.1016/j.psychsport.2014.08.013
- 19 Hann, K. E. J., & McCracken, L. M. (2014). A systematic review of randomized controlled trials  
20 of Acceptance and Commitment Therapy for adults with chronic pain: Outcome domains,  
21 design quality, and efficacy. *Journal of Contextual Behavioral Science*, 3, 217-227. doi:  
22 org/10.1016/j.jcbs.2014.10.001

- 1 Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and Commitment Therapy as a  
2 unified model of behavior change. *Journal of Counseling Psychology*, 40, 976-1002.  
3 doi:10.1177/0011000012460836
- 4 Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experimental  
5 avoidance and behavioral disorders: a functional dimensional approach to diagnosis and  
6 treatment. *Journal of Consulting and Clinical Psychology*, 64, 1152-1168.
- 7 Jõesaar, H., Hein, V., & Hagger, M. S. (2012). Youth athletes' perception of autonomy support  
8 from the coach, peer motivational climate and intrinsic motivation in sport setting: One-  
9 year effects. *Psychology of Sport and Exercise*, 13, 257-262. doi:  
10 org/10.1016/j.psychsport.2011.12.001
- 11 Jaccard, J., & Turrisi, R. (2003). *Interaction effects in multiple regression* (2nd ed.). Thousand  
12 Oaks, Calif.: Sage Publications.
- 13 Jia, L., Tong, E. M. W., & Lee, L. N. (2014). Psychological "Gel" to bind individuals' goal  
14 pursuit: Gratitude facilitates goal contagion. *Emotion*, 14, 748-760.
- 15 Jowett, S., & Timson-Katchis, M. (2005). Social networks in sport: Parental influence on the  
16 coach-athlete relationship. *The Sport Psychologist*, 19, 267-287.
- 17 Krause, N. (2009). Religious involvement, gratitude, and change in depressive symptoms over  
18 time. *International Journal for the Psychology of Religion*, 19, 155-172.  
19 doi:10.1080/10508610902880204
- 20 Lambert, N. M., Fincham, F. D., & Stillman, T. F. (2011). Gratitude and depressive symptoms:  
21 The role of positive reframing and positive emotion. *Cognition and Emotion*, 26, 615-  
22 633.

- 1 Lambert, N. M., Graham, S. M., Fincham, F. D., & Stillman, T. F. (2009). A changed  
2 perspective: How gratitude can affect sense of coherence through positive reframing. *The*  
3 *Journal of Positive Psychology*, 4, 461-470. doi:10.1080/17439760903157182
- 4 Lewis, C., & Marx, J. (1990). *Inside track: My professional life in amateur track and field*. New  
5 York: Simon and Schuster.
- 6 Lin, C.-C. (2013). A higher-order gratitude uniquely predicts subjective well-being: Incremental  
7 validity above the personality and a single gratitude. *Social Indicators Research*, 119,  
8 909-924. doi:10.1007/s11205-013-0518-1
- 9 Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-  
10 sectional research designs. *Journal of Applied Psychology*, 86, 114-121.
- 11 Loo, J. M. Y., Tsai, J.-S., Raylu, N., & Oei, T. P. S. (2014). Gratitude, hope, mindfulness and  
12 personal-growth initiative: Buffers or risk factors for problem gambling? *PLoS ONE*,  
13 9(2), e83889. doi:10.1371/journal.pone.0083889
- 14 MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of  
15 dichotomization of quantitative variables. *Psychological Methods*, 7, 19-40.
- 16 McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: A  
17 conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82,  
18 112-127. doi:10.1037//0022-3514.82.1.112
- 19 Panayiotou, G., Leonidou, C., Constantinou, E., Hart, J., Rinehart, K. L., Sy, J. T., &  
20 Björgvinsson, T. (2015). Do alexithymic individuals avoid their feelings? Experiential  
21 avoidance mediates the association between alexithymia, psychosomatic, and depressive  
22 symptoms in a community and a clinical sample. *Comprehensive Psychiatry*, 56, 206-  
23 216. doi:org/10.1016/j.comppsy.2014.09.006



- 1 Ryan, R. M., & Deci, E. L. (2008). A self-determination theory approach to psychotherapy: The  
2 motivational basis for effective change. *Canadian Psychology*, 49, 186-193.
- 3 Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory  
4 perspective on eudaimonia. *Journal of Happiness Studies*, 9, 139-170.  
5 doi:10.1007/s10902-006-9023-4
- 6 Siemsen, E., Roth, A., & Oliveira, P. (2009). Common method bias in regression models with  
7 linear, quadratic, and interaction effects. *Organizational Research Methods*, 13, 456-476.  
8 doi:10.1177/1094428109351241
- 9 Swain, J., Hancock, K., Dixon, A., & Bowman, J. (in press). Acceptance and Commitment  
10 Therapy for children: A systematic review of intervention studies. *Journal of Contextual*  
11 *Behavioral Science*. doi:org/10.1016/j.jcbs.2015.02.001
- 12 Wilson, A. C., Wilhelm, S., & Hartmann, A. S. (2014). Experiential avoidance in body  
13 dysmorphic disorder. *Body Image*, 11, 380-383. doi: org/10.1016/j.bodyim.2014.06.006
- 14 Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008). The role of gratitude in  
15 the development of social support, stress, and depression: Two longitudinal studies.  
16 *Journal of Research in Personality*, 42, 854-871. doi:10.1016/j.jrp.2007.11.003

## 17 Table 1

18 *Correlation Matrix for Research Constructs*

	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4
1. Dispositional gratitude	6.06	0.94	.83	1.00			
2. Perceived coach autonomy support	4.40	1.41	.93	.20*	1.00		
3. Experiential avoidance at Time 1	3.75	1.21	.82	-.08	.08	1.00	
4. Experiential avoidance at Time 2	3.84	1.05	.78	-.11	.06	.61**	1.00

19 \* $p < .05$ ; \*\* $p < .01$

20 Table 2

21 *Hierarchical Regression in Predicting Athletes' Experiential Avoidance at Time 2*

	Experiential avoidance Time 2		
	Model 1	Model 2	Model 3
Constant	3.83	3.84	3.88
Experiential avoidance at Time 1	.65/.61***	.64/.61***	.64/.60***
Dispositional gratitude		-.07/.07	-.09/-.08
Perceived Coach Autonomy support		.03/.03	.04/.04
Interaction term			-.18/-.15*
$R^2$	.38	.38	.40
$F$	83.44***	27.99***	22.79***
$\Delta F$		.54	4.82*

22 \* $p < .05$ ; \*\*\* $p < .001$ 

23 Note: Unstandardized (left) and standardized regression coefficients are reported.

24 **Figure Captions**

25 *Figure 1*

26 Simple regression lines predicting change in experiential avoidance.

